

REMARKS/ARGUMENTS

Re-examination and favorable reconsideration in light of the above amendments and the following comments are respectfully requested.

Claims 1 - 40 are pending in the application. Currently, claims 1, 3 - 11, 14 - 20, 23 - 26, 30, 31, 35, and 37 - 40 stand rejected; claims 29 and 32 stand allowed; claims 21 and 22 stand objected to; and claims 12, 13, 27, 28, 33, 34, and 36 stand withdrawn from consideration.

By the present amendment, claims 1, 7, 17, 19, 21, and 37 have been amended with claims 7 and 21 having been placed into independent form to gain their allowance. Further, claims 3 - 5 and 14 - 16 have been cancelled and new claim 41 has been added to the application.

In the office action mailed February 11, 2004, claims 1 - 11 and 31 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite; claims 1 and 3 - 5 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,720,339 to Glass et al.; claims 14 - 17, 24, 30 and 31 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,182,442 to Schmidt et al.; claims 1, 6, 9 - 11, 14, 15, 17 - 20, 24, 30, 31, and 37 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,583,583 to Wittel; claim 23 was rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt in view of U.S. Patent No. 3,630,449 to Butler; claim 25 was rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt et al.; claim 35 was rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt et al. in view of Glass et al.; and claims 19 - 26 and 37 - 40 were rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt in view of U.S. Patent No. 2,968,918 to Denison, Jr.

The foregoing rejections are traversed by the present response.

The present invention relates to a heat exchanger panel which may be incorporated into a wall system of a propulsion device. The heat exchanger comprises a first panel and a second panel. The second panel is separate from the first panel. Each of the first and second panels is formed from a high temperature composite material with the first panel being formed from one of a carbon/carbon composite material and a carbon/silicon carbide composite material and the second panel being formed from one of a carbon/carbon composite material and a carbon/silicon carbide composite material. A fluid containment device is sandwiched between the first and second panels with the fluid containment device not being fastened to either of said first and second panels.

With respect to the rejection of claims 1 - 11 and 31 under 35 U.S.C. 112, second paragraph, Applicants disagree with the rejection. The word "attached" is synonymous with the word "fastened", which is used in the specification. However, in order to obviate this rejection, the word "attached" has been deleted from the claim in favor of the word "fastened". Thus, the language of claim 1 is now consistent with the language in the specification. Thus, there is no ambiguity. With regard to claim 31, the Examiner has not given any reason why there is a problem with this claim. Thus, it remains unamended. The Examiner is hereby requested to withdraw this rejection.

Claim 1 as amended now calls for the second panel to be separate from the first panel and also calls for both the first panel and the second panel to be formed from one of a carbon/carbon composite material and a carbon/silicon carbide composite material. It is submitted that claim 1 as amended is allowable over the Glass et al. patent. A review of this patent

shows that it lacks the claimed first and second panels. What the Examiner deem to be the first and second panels is in fact nothing more than the top and bottom portions of a single material. Thus, they could not possibly be separate from each other. For this reason, claim 1 and the claims which depend from claim 1 are allowable over the Glass et al. patent.

With respect to the rejection of claim 1 on anticipation grounds over the Wittel patent, claim 1 has been amended to include the materials forming the first and second panels. These materials are neither taught nor suggested by Wittel. Thus, claim 1 as currently amended is clearly allowable over the Wittel patent. The claims which depend from claim 1 are allowable for the same reason as claim 1 and further on their own accord.

By the present amendment, claim 7 has been placed into independent form. It is submitted that this claim and dependent claim 8 are now in condition for allowance.

Claim 17 has been amended to state that the at least one heat exchanger panel forms part of a wall of a propulsion system. The claim has further been amended to say that there is at least one first bore in the inner panel which is aligned with at least one second bore in the outer panel and to say that at least one fastener extends through the at least one first bore and the at least one second bore. It is submitted that neither Schmidt et al. nor Wittel teach or suggest the combination of elements set forth in amended claim 17. Schmidt et al. clearly lacks the claimed first and second bores and the claimed fastener extending through the first and second bores. With regard to Wittel, This patent is directed to a fuel cell structure. The structure lacks a heat exchanger panel which forms part of a wall of a propulsion system. For these reasons, claim 17 is allowable over Wittel and Schmidt et al.

The claims which depend from claim 17 are allowable for the same reasons as claim 17 as well as on their own accord. For example, with respect to claim 18, it should be noted that Schmidt et al. does not have a coolant containment device which is not fastened to either of the outer and inner panels. In Schmidt et al. the coolant containment device is in fact formed by the inner and outer panels. Claim 19 is also allowable over Schmidt et al. because Schmidt et al. lacks the claimed substructure and the fastener for securing the outer and inner panels to the substructure. Still further, Schmidt et al. lacks any teaching of the composite fastener of claim 20, the composite leading edge of claim 24, the fuel injecting means in claim 25-28, the discontinuous panel structure of claim 33, the spacers of claim 34, and the scramjet engine structure of claim 35.

By the present amendment, claim 21 has been placed into independent form. Thus claims 21 and 22 are now in condition for allowance.

With regard to claim 37, this claim has now been amended to say that the at least one heat exchanger and substructure form a portion of a wall of the wall system used in an air breathing propulsion system. It is submitted that claim 37 as amended is clearly allowable over the Wittel patent. Wittel lacks a heat exchanger and a substructure which forms a portion of a wall of a wall system for use in an air breathing propulsion system. Claims 38-40 are allowable for the same reasons as claim 37 and further on their own accord.

With regard to the secondary references cited and applied by the Examiner, it should be noted that none of Butler and Denison Jr. over come the aforenoted deficiencies of the primary references. With regard to the Examiner's interpretation of Denison Jr., it should be noted that what the Examiner has

interpreted to be a substructure is in fact an annular manifold which is welded to the outer shell 21 of Denison's rocket motor. It is submitted that this manifold does not form any part of a wall of a wall system for use in an air breathing propulsion system.

New claim 41 has been added to the application and is believed to be allowable for the same reasons that claim 37 is allowable as well as on its own accord.

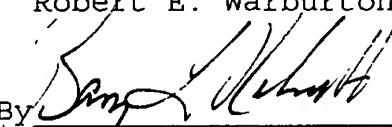
The instant application is believed to be allowable for the foregoing reasons. Such allowance is respectfully solicited.

Should the Examiner believe an additional amendment is needed to place the case in condition for allowance, the Examiner is hereby invited to contact's Applicants' attorney at the telephone number listed below.

The Commissioner is hereby authorized to charge Deposit, Account No. 21-0279 in the amount of \$86.00 to cover the cost of an extra independent claim. Should the Commissioner determine that an additional fee is due, he is hereby authorized to charge said fee to said Deposit Account.

Respectfully submitted,

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I, Nicole Motzer, hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on May 11, 2004.

